

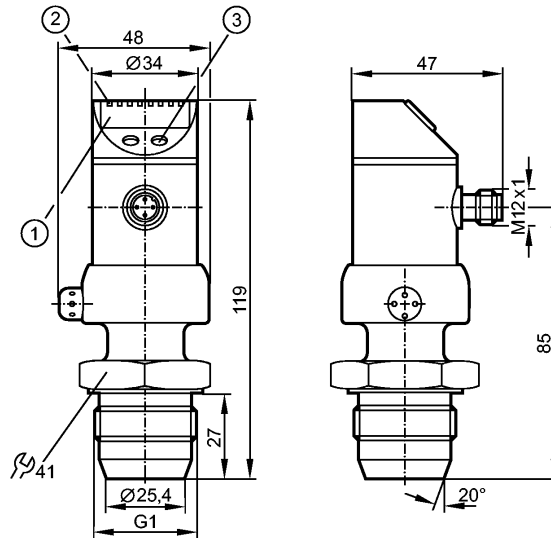


PIM694

PIM010-REA01-KFPKG/US/ /P



Pressure sensors



- 1: 4-digit alphanumeric display
- 2: status LEDs
- 3: Programming button



EC 1935/2004 EHEDG Certified



Product characteristics

Combined sensor for pump diagnosis and pressure monitoring

Quick disconnect

no dead space

Freely rotatable housing 350°

Zero and span adjustable

Function programmable

Sealing cone G 1 male

Process connection: Sealing cone G 1 male

2 outputs

OUT1 = pump diagnosis

OUT2 = pressure monitoring

4-digit alphanumeric display

Measuring range: -1.00...10.00 bar / -14.5...145.0 psi / -0.100...1.000 MPa

Application

Application

Type of pressure: relative pressure
Hygienic systems, viscous media and liquids with suspended particles
Liquids and gases

Pressure rating

50 bar

725 psi

5 MPa

Bursting pressure min.

150 bar

2175 psi

15 MPa

Medium temperature

[°C]

-25...125 (145 max. 1h)

Electrical data

Electrical design

DC PNP

Operating voltage

[V]

18...32 DC

Current consumption

[mA]

< 50

Insulation resistance

[MΩ]

> 100 (500 V DC)

Protection class

III

Reverse polarity protection

yes

Outputs



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Output	2 outputs OUT1 = pump diagnosis OUT2 = pressure monitoring
Output function	1 x normally open / normally closed programmable + 1 x normally open / normally closed programmable or 1 x analog (4...20 / 20...4 mA, scalable)
Current rating [mA]	250
Voltage drop [V]	< 2
Short-circuit protection	yes (non-latching)
Overload protection	yes
Switching frequency [Hz]	350 (OUT2)
Analog output	I: 4...20 mA (Ineg: 20...4 mA)
Max. load [Ω]	I / Ineg: max. (U _b - 10 V) x 50

Measuring / setting range			
Measuring range	-1.00...10.00 bar	-14.5...145.0 psi	-0.100...1.000 MPa
Setting range			
Set point, SP	-0.98...10.00 bar	-14.2...145.0 psi	-0.098...1.000 MPa
Reset point, rP	-1.00...9.98 bar	-14.5...144.7 psi	-0.100...0.998 MPa
Analog start point, ASP	-1.00...7.25 bar	-14.5...105.1 psi	-0.100...0.725 MPa
Analog end point, AEP	1.50...10.00 bar	21.8...145.0 psi	0.150...1.000 MPa
in steps of	0.01 bar	0.1 psi	0.001 MPa
Factory setting	OU1 = Fnc; OU2 = I ASP = 0.00 bar; AEP = 10.00 bar		

Accuracy / deviations	
Accuracy / deviations (in % of the span) Turn down 1:1	
Switch point accuracy	< ± 0.2
Characteristics deviation *)	< ± 0.2
Linearity	< ± 0.15
Hysteresis	< ± 0.15
Repeatability **)	< ± 0.1
Long-term stability ***)	< ± 0.1
Temperature coefficients (TEMPCO) in the temperature range 0...70° C (in % of the span per 10 K)	
Greatest TEMPCO of the zero point	< ± 0.15
Greatest TEMPCO of the span	< ± 0.1

Reaction times	
Power-on delay time [s]	0.2
Min. response time switching output [ms]	2.5
Damping for the switching output (dAP) [s]	0.00...10.00 (OUT2)
Damping for the analog output (dAA) [s]	0.00...10.00
Step response time analogue output [ms]	0.2
Integrated watchdog	yes

Environment	
Ambient temperature [°C]	-25...80
Storage temperature [°C]	-40...100



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Protection	IP 67 / IP 69K
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Tests / approvals

EMC	EN 61000-4-2 ESD: 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-5 Surge: 0.5/1 kV EN 61000-4-6 HF conducted: 10 V
Shock resistance	DIN IEC 68-2-27: 50 g (11 ms)
Vibration resistance	DIN IEC 68-2-6: 20 g (10...2000 Hz)
MTTF [Years]	188

Mechanical data

Process connection	Sealing cone G 1 male
Materials (wetted parts)	ceramics (99.9 % Al ₂ O ₃); PTFE; stainless steel 316L / 1.4435; surface characteristics: Ra < 0.4 / Rz 4
Housing materials	stainless steel 316L / 1.4404; PC (Makrolon); PBT (Pocan); PEI; FPM (Viton); PTFE
Switching cycles min.	100 million
Weight [kg]	0.451

Displays / operating elements


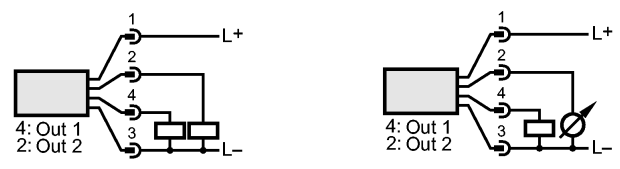
Display	Display unit 4 x LED green Switching status 2 x LED yellow Function display 4-digit alphanumeric display Measured values 4-digit alphanumeric display
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Electrical connection

Connection	M12 connector; gold-plated contacts
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Wiring

Programming of the output function
 -----OUT1-----
 - Switching output
 Fno = window function / normally open
 Fnc = window function / normally closed
 -----OUT2-----
 - Switching output
 Hno = hysteresis / normally open
 Hnc = hysteresis / normally closed
 Fno = window function / normally open
 Fnc = window function / normally closed
 - Analog output
 I = current output (4...20 mA)
 InEG = current output (20...4 mA)

Remarks

Remarks	*) linearity, incl. hysteresis and repeatability; (limit value setting to DIN 16086) **) with temperature fluctuations < 10 K ***) in % of the span per year pump diagnosis for pumps with constant rotational speed (+/- 10 % deviation of the taught rotational speed)
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Pressure sensors

rotational speed range: 40...3000 rpm
minimum pressure for pump diagnosis: 0.5 bar
The 3-A qualification is only valid if adapters with 3-A qualification are used for installation.

Pack quantity	[piece]	1
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